UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
ZENATI, AMAL S

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*30 January 2004*</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 5, 6, 7, 8, 12, 13, 14, 15, 22, and 24** are rejected under 35 U.S.C 102 (e) as being anticipated by **Das et al (US 6847714 B1).**

    Consider **claims 1, 22, and 24,** Das et al clearly shows and discloses a method, a system, and a computer-usable medium embodying computer program code for performing operator selection comprising: initiating a dialog between a contact and a call handing system; identifying a language variation spoken by the contact; determining a skill level with respect to the language variation for each operator within a set of operators; selecting an operator whose skill level in the language variation is above a predetermined value; and transferring the dialog with the contact to the operator (col. 6, claim 5; col. 7, claim10; col. 7, claim 11).

    Consider **claims 5, 6, 7, and 8**, Das et al clearly shows that selecting includes: selecting an operator with a highest skill level in the language variation (col. 3, line 15-19); queuing the contact with a soon to be available operator with a highest skill level in the language variation (col. 3, line 57-64); selecting an operator whose second language is equal to the language variation of the contact; selecting an operator whose cultural background is associated with the language variation of the contact (col. 3, line 18-22).

Consider **claim 12, Das et al** clearly shows that initiating includes: initiating dialog between the contact and an interactive voice response interface (col. 1, line 44-46).

Consider **claims 13 and 14, Das et al** clearly shows that the language variation is an accent variation; and the language variation is a dialect variation (col. 1, line 58-62; col. 3, line 35-39; col. 8, claim 19).

Consider **claims 15, Das et al** clearly shows that identifying includes; retrieving the contact's language variation from a contact database (col. 6, line 26-27).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

4.   **Claims 2, 3, 4, 9, and 10,** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent # 6,847,714 B1)** in view of **Bala (US Patent # 6,798,876 B1).**

Consider **claim 2, 3,** and **4, Das et al** shows the accent of a contact is automatically determined from a speech sample of the party, and based on the accent the call is sent for servicing to a call-center agent (operator) who skilled in the determined accent.

However, **Das et al** does not specifically disclose that determining includes the following: receiving a self rating from an operator regarding how difficult a dialog was with a contact who speaks the language variation; and defining a set of dialog key words indicating communication difficulties; rating an operator based on how many of the key words the operator spoke in a dialog with a contact who speaks the language variation; measuring a time an operator spent engaged in a dialog with a contact who speaks the language variation; counting a number of works spoken during the dialog with the contact who speaks the language variation; rating the operator based on the time spent and number of words spoken; and updating the skill level of the operator using the rating; generating a report on all language variations spoken by contacts calling the call handling system; generating a report on operator skill levels with respect to a predefined set of language variations.

In the same field of endeavor, **Bala** clearly discloses designed to store call summary statistics pertaining to the success or failure of the previous calls, average rate times before successful connects (col. 3, line 25-28); comparing the caller profile and answers to the prompted questions with stored customer service representative profiles to determine which customer service representative are more qualified to handle the incoming call and ranking the operator that can best meet the caller's needs and automatically updating at the completion of the call; the operator profile comprise average duration of those calls, foreign languages spoken and other information (col. 7 claim 13 and16; col. 8, claim 18 and 20); caller profile that includes languages (col. 8, claim 18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to automatically updating both the caller and operator profiles with information regarding both the caller and operator during the call as taught by Bala in Das et al, in order to achieve the best result for ranking the operator that can best meet the caller's need.

5.   Claims 16, 18, 20, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent # 6,847,714 B1)** in view of **Bahler (US Patent # 4,896,358).**

As per claims 16, 18, 20, and 23, **Das et al** shows the language and the accent of a contact is automatically determined from a speech sample of the party, and based on the accent the call is sent for servicing to a call-center agent (operator) who skilled in the determined accent.

However, **Das et al** does not specifically disclose that determining includes the following: generating a set of confidence scores indicating a likelihood that the contact speaks each language variation within a set of language variations; generating an inverse distance weighted confidence score for each of the language variations using the confidence score and an inversely weighted distance between the contact and each language variation; and associating a language variation with the contact if that language variation's inverse distance weighted confidence score is above a predetermined value (a highest variation's invers distance weighted confidence score with the contact).

In the same field of endeavor, **Bahler et al** clearly discloses generating a score that indicates the likelihood for determining whether the speech contains a valid phrase or keyword as compared to an undesirable utterance (abstract, line 7-10); **Bahler et al** also discloses that the weighted distance is between the segment of speech under consideration (the contact) and a keyword template (language variation) (col. 7, line 3-27); comparing set of signals (contact) with keyword templates (language variation) and selecting the keyword template having the greatest statistical similarity set of signals (col. 7, line 45-48), Bahler et al discloses the above steps for the purpose of applying the above method for identifying the language and accent variation.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include and explain the method for recognize language variation as taught by Bahler et al in Das et al, in order to improve the technique of identifying language and accent variation.

6.   **Claims 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent #**

6,847,714 B1) in view of **Bahler (US Patent # 4,896,358)** and further in view of **Mitsa (Image**

Registration using Elastic Contours and Internal Landmarks, IEEE Instrumentation and Measurement

Technology Conference St. Paul, Minnesota, USA 18-20,1998).

        Das et al and **Bahler** disclose the claimed invention above but lack teaching of the details for

calculating the inverse distance weighted confidence score.

        However, **Mitsa** disclose the calculation details for getting the value of inverse distance weighted

confidence score for the purpose of simplify the calculation when the data points is large such as language

variation and images; **Mitsa** clearly shows generating inverse distance weighted method in formula as in

equation (2) which shows selecting a first point (a first language variation) as a first origin;

calculating a distance between the first origin and each other points (other language variation);

normalizing these distances with respect to the first origin; multiplying each normalized distance

by its respective confidence score to generate a set of multiplied results; totaling the multiplied

results to yield an inverse-distance weighted confidence score for the first point (the first

language variation); selecting a second point (a second language variation) as a second origin;

and repeating the selecting, calculating, normalizing, multiplying, and totaling for the second

origin as I points (language variation) in the equation (2) takes the variable from 1 through n.

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        Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use the method of calculating the inverse distance weighted as taught by Mitsa in

Das et al and Bahler, in order to achieve the one advantage of inverse distance weighted methods which is

large number of variations available and be easily modified to meet the specific needs for using this

method in language and accent variation.

7.   **Claims 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent #**

6,847,714 B1) in view of **Bahler (US Patent # 4,896,358)** and further in view of **Gupta (US Patent #**

6,122,361)

Das et al and **Bahler** disclose the claimed invention above but lack specifying the geographical location

(physical distance) as a distance that is relate to the user (contact) location.

However, **Gupta** discloses means for consider a geographical location of the user as a distance for

the purpose of getting valuable information that can be used as in conjunction with acoustical match

between the spoken utterance and orthographies in the speech recognition (col. 2, line55-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use the geographical distance as taught by Gupta in Das et al and Bahler, in order

to improve the accuracy of the speech recognition.

8.   **Claims 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Das et al (US Patent #**

6,847,714 B1) in view of **Bahler (US Patent # 4,896,358).**

Das et al disclose the claimed invention 1 as explained above but lack the teaching of claimed

invention 16 as explained above.

However, **Bahler** discloses the claimed invention 16 as explained above for the purpose of

applying the specific technique such as generating an inverse distance weighted confidence score to an

automatic speech recognition system for better functioning.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use these technique as taught by Bahler in Das et al, in order to accomplish a better

performance for automatic speech recognition system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Amal Zenati whose telephone number is **(571)270-1947.** The examiner can normally

be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len

Tran can be reached on 571- 272- 1184. The fax phone number for the organization where this

application or proceeding is assigned is 571- 571-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner Amal Zenati

October 25, 2007

LEN TRAN
PRIMARY EXAMINER
11/5/07